

PHOTOCONDUCTIVE SERIES

PLANAR DIFFUSED SILICON PHOTODIODES



The Photoconductive Detector Series are suitable for high speed and high sensitivity applications. The spectral range extends from 350 to 1100 nm, making these photodiodes ideal for visible and near IR applications, including such AC applications as detection of pulsed LASER sources, LEDs, or chopped light.

To achieve high speeds, these detectors should be reverse biased. Typical response times from 10 ns to 250 ns can be achieved with a 10V reverse bias, for example. When a reverse bias is applied, capacitance decreases (as seen in the figure below) corresponding directly to an increase in speed.

APPLICATIONS	FEATURES
--------------	----------

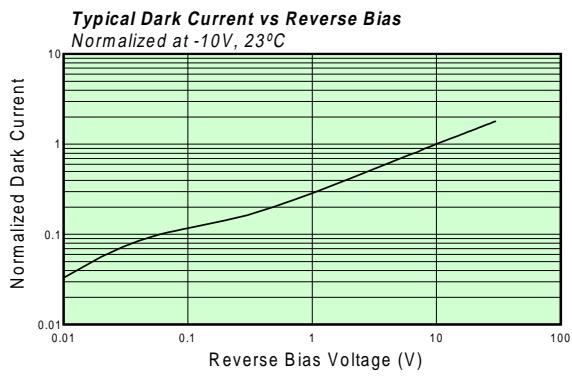
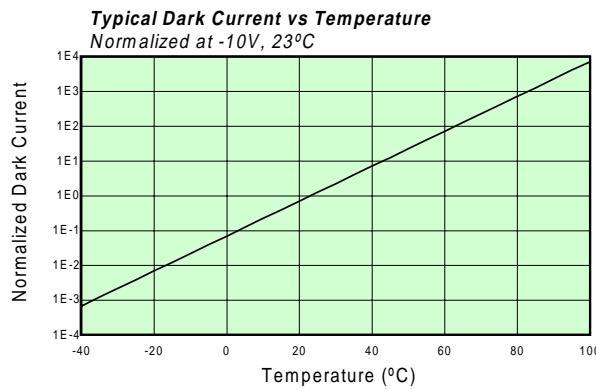
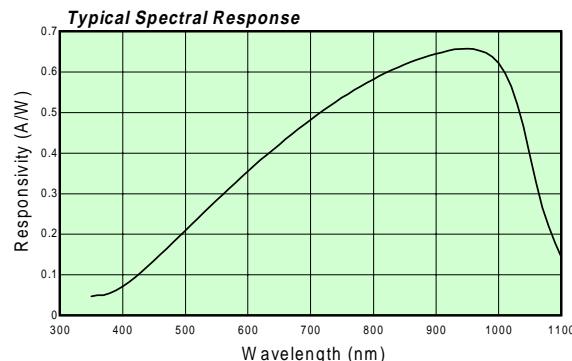
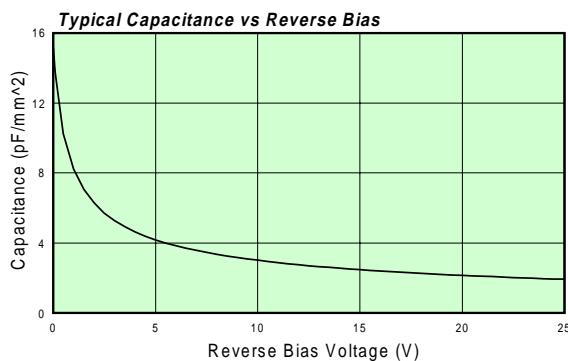
- Pulse Detectors
- Optical Communications
- Bar Code Readers
- Optical Remote Control
- Medical Equipment
- High Speed Photometry

- High Speed Response
- Low Capacitance
- Low Dark Current
- Wide Dynamic Range
- High Responsivity

As indicated in the specification table, the reverse bias should not exceed 30 volts. Higher bias voltages will result in permanent damage to the detector.

Since a reverse bias generates additional dark current, the noise in the device will also increase with applied bias. For lower noise detectors, the Photovoltaic Series should be considered.

Refer to the *Photoconductive Mode (PC)* paragraph in the “Photodiode Characteristics” section of this catalog for detailed information on electronics set up.



PHOTOCONDUCTIVE SERIES
TYPICAL ELECTRO-OPTICAL SPECIFICATIONS AT TA=23°C

Model No.	Active Area		Responsivity (A/W)						Capacitance (pF)		Dark Current (nA)		NEP (W/Hz)		Reverse Voltage (V)	Rise Time (ns)	Temp Range (°C)	Package Style ¶
	Area (mm ²)	Dimension (mm)	400 nm		632 nm		970 nm		0 V	-10 V	-10 V	-10V 970 nm				Operating	Storage	
			min	typ	min	typ	min	typ	typ	typ	max	typ	max	typ		typ		

D SERIES, METAL PACKAGE

PIN-020A	.20	0.51f	.07	.12	.33	.40	.60	.65	4	1	.01	.15	2.8 e -15	30	26	-40 ~ +100 -55 ~ +125	1 / TO-18 4 / TO-18 7 / TO-18 2 / TO-5 5 / TO-5 2 / TO-5 5 / TO-5 3 / TO-8 6 / TO-8 3 / TO-8 6 / TO-8 10 / Lo-Prof 11 / BNC 12 / BNC														
PIN-040A	.81	1.02f							8	2	.05	.50	6.2 e -15		24																
PIN-2DI*	1.1	.81 x 1.37							25	5	.10	1.0	8.7 e -15		13																
PIN-3CDI	3.2	1.27 x 2.54							45	12	.15	2	1.1 e -14		12																
PIN-3CD									85	15	.25	3	1.4 e -14		14																
PIN-5DI	5.1	2.54f							225	40	.35	6	1.6 e -14		17																
PIN-5D									30	60	.5	10	1.9 e -14		24																
PIN-13DI	13	3.6 sq							700	130	1	15	2.8 e -14		43																
PIN-13D									1500	300	2	25	3.9 e -14		250																
PIN-6DI	16.4	4.57f							9500	1800	15	1000	1.1 e -13																		
PIN-6D																															
PIN-44DI	44	6.6 sq																													
PIN-44D																															
PIN-10DI	100	11.28f																													
PIN-10D																															
PIN-25D	613	27.9f																													

D SERIES, PLASTIC PACKAGE §

FIL-3C	3.2	1.27 x 2.54	.08	.12	.33	.40	.60	.65	45	12	.15	2	1.1 e -14	30	13	-10 ~ +60 -20 ~ +70	14 / Plastic
FIL-5C	5.1	2.54f							85	15	.25	3	1.4 e -14		12		
FIL-20C	16.4	4.57f							330	60	.5	10	1.9 e -14		17		
FIL-44C	44	6.6 sq							700	130	1	15	2.8 e -14		24		
FIL-100C	100	11.28f							1500	300	2	25	3.9 e -14		43		
PIN-220D	200	10 x 20							3200	600	5	100	6.2 e -14		75		

* The I suffix on the model number is indicative of the photodiode chip being isolated from the package by an additional pin connected to the case.
 § The photodiode chips in FIL series are isolated in a low profile plastic package. They have a large field of view as well as in line pins.

For MECHANICAL DRAWINGS Click Here